WHAT IS CLAIMED IS:

1. A method of analyzing pore structure in a microporous polyolefin film, comprising applying a detectable material to one surface of a microporous polyolefin film wherein the detectable material is capable of traveling through pores in the film; and focusing a confocal microscope at a depth within the film to obtain a first image of the detectable material within pores of the film at the depth within the film.

2. The method according to claim 1, further comprising focusing the confocal microscope at at least one additional depth within the film to obtain at least one additional image of the detectable material within pores of the film at the at least one additional depth.

3. The method according to claim 2, further comprising focusing the confocal microscope at the one surface to obtain a first surface image.

4. The method according to claim 3, wherein an additional detectable material which is not capable of traveling through pores in the film is applied to the one surface prior to focusing of the confocal microscope on the one surface.

5. The method according to claim 4, wherein the additional detectable material comprises detectable particles of a size which prevents their travel through pores in the film.

6. The method according to claim 3, further comprising focusing the confocal microscope at the other surface of the film to obtain a second surface image of the detectable material at the other surface.

7. The method according to claim 2, further comprising focusing the confocal microscope at the other surface of the film to obtain a surface image of the detectable material at the other surface.

8. The method according to claim 1, further comprising focusing the confocal microscope at a plurality of additional depths within the film to obtain a plurality of additional images of the detectable material within pores of the film at the plurality of additional depths.

9. The method according to claim 8, further comprising aligning the first image and the plurality of images to create a three dimensional image of pore structure through the film.

10. The method according to claim 1, wherein the detectable material is a fluorescent dye.

11. The method according to claim 1, wherein the polyolefin comprises polyethylene.

12. The method according to claim 11, wherein the polyethylene comprises a filler.

13. The method according to claim 12, wherein the filler comprises calcium carbonate.

14. A method of analyzing pore structure in a microporous polyethylene film, comprising applying a detectable dye to one surface of a microporous polyethylene film; focusing a confocal microscope at a plurality of depths within the film to obtain a plurality of images of the dye within pores of the film at the plurality of depths within the film; focusing the confocal microscope at the other surface of the film to obtain a surface image of the dye at the other surface; and aligning the obtained images to create a three dimensional image of pore structure through the film.

15. A three dimensional image of pore structure within a microporous polyolefin film, comprising a plurality of aligned confocal microscope images, wherein each confocal microscope image comprises a two dimensional image of pore structure at a depth within the film.

16. The three dimensional image according to claim 15, wherein the pore structure in each two dimensional image is represented by a detectable dye.

17. The three dimensional image according to claim 15, wherein the polyolefin comprises polyethylene.

18. The three dimensional image according to claim 17, wherein the polyethylene comprises a filler.

19. The three dimensional image according to claim 18, wherein the filler comprises calcium carbonate.

20. A three dimensional image of pore structure within a microporous polyethylene film comprising a calcium carbonate filler, the three dimensional image comprising a plurality of aligned confocal microscope images, wherein each confocal microscope image comprises a two dimensional image of pore structure at a depth within the film and wherein the pore structure in each two dimensional image is represented by a detectable dye.